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Forest Health Protection

Pacific Southwest Region

Date: August 29, 2002
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To: District Ranger, Truckee Ranger District, Tahoe National Forest

Subject: Mountain pine beetle activity in Goose Meadow and Silver Creek campgrounds (FHP Report NE02-07)

On August 8, 2002, I visited Goose Meadow and Silver Creek Campgrounds at the request of Mary Westmorland and Mina Hernandez. The objective of the field visit was to assess the current and past lodgepole pine mortality in and surrounding the campgrounds and to determine what alternatives are available to reduce and/or prevent future losses.

We also briefly visited the Silver Creek summer home tract. Another evaluation should be requested to devote more time to that area if Forest Health Protection input is desired.

Introduction

Goose Meadow campground is located about 4 miles south of Truckee, CA on Highway 89. It has 24 camping sites. Silver Creek campground is located about 3 miles further south from Goose Meadow along Highway 89 and has 27 campsites. Overstory vegetation at both campgrounds consists of lodgepole pine with a lessor component of white fir, Jeffrey and ponderosa pine. The lodgepole pine trees are likely 80-100+ years old. There is little or no new regeneration in the areas visited.

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Mountain pine beetle-related mortality has been occurring in lodgepole pine stands near Truckee for several years. Previous Forest Pest Management biological evaluations (see 3420. June 30, 1986 FPM Report No. 86-9 and March 20, 1995 FPM Report No. NE95-6) have provided management alternatives for several of these stands. Long term management with the objective of preventing unacceptable levels of mortality by improving tree and stand vigor through thinning has had encouraging results in the area immediately north of Prosser Lakeview Estates. Reduced mortality was also detected following removal of green-infested lodgepole pine trees prior to beetle flight in the Donner Camp area.

Field Observations

Both campgrounds have trees that meet the characteristics of being highly susceptible to mountain pine beetle attack: greater the 8" DBH, greater than 80 years old, and existing in pure or nearly pure lodgepole type with a history of mountain pine beetle infestation in surrounding areas. In addition to these characteristics, the last two winters of below normal precipitation have placed additional stress on all conifers making them more favorable hosts for successful bark beetle attack.

Both campgrounds have current and past mountain pine beetle activity which has resulted in mortality of lodgepole pine. Observed mortality included individual trees and those in 3-5 tree groups. Mortality was observed within the campgrounds, around the perimeter of the campgrounds and more extensively up and down the highway corrider on both the east and west side of the highway. The majority of the mortality is concentrated along the river side (east) as this is where the concentrations of older and more monoculture stands of lodgepole pine are found. Although large group kills (in terms of numbers of trees) were not seen in the campground, the continued loss of a few trees over numerous years in concert with lack of regeneration will trend toward very open camp sites which may present a management concern.

Although we did not spend enough time in each campground to evaluate individual trees I did notice a green infested tree at campsite #15 in the Silver Creek campground.

Management Alternatives

1. **Do nothing**. Mountain pine beetle will continue to remain active in these stands as long as the trees are suitable for successful attack. Over time the beetle has reduced the stocking, predominantly in the larger DBH trees. The result of this alternative will be continued mortality at current or increasing levels, unplanned openings and the continued risk associated with hazard trees.

2. **Direct Control.** There is no general agreement regarding the effectiveness of direct control of mountain pine beetle, however there may be limited application to the campgrounds. To implement this alternative a complete survey of every lodgepole pine tree in the campgrounds would be necessary to determine which trees have been successfully attacked during 2002. These trees would require removal, or some other type of method to destroy the beetles, by May

15, of next year (prior to beetle emergence). Yearly treatment and surveillance would be required dependent upon beetle activity. It is important to note that the trees will remain susceptible to mountain pine beetle until conditions are altered by long-term management. Several options for direct control are available and further information can be provided if the District chooses to implement this alternative.

3. **Salvage.** Implementation of this alternative would result in the removal of all dead trees in the campgrounds and surrounding perimeter areas. This appears to be the current method of management for trees in these areas. Value from fuelwood sales may be realized and the immediate threat of hazard trees is reduced, however the underlying causes of stand/tree susceptibility are not altered to prevent/reduce mortality. Mountain pine beetle would continue to cause mortality in the older, large diameter classes. Because of the "group kill" characteristic in these stands there may be openings larger than desired after salvage removal. Some type of revegetation in these areas may be desirable.

4. **Prevention.** The objective of management opportunities that incorporate prevention are to reduce the susceptibility of the trees to mountain pine beetle attacks. Preventative treatments can include thinning to promote tree growth and vigor and/or insecticide treatment to prevent successful attacks.

A. **Thinning**. Thinning could be used to reduce the stocking in the clumps of lodgepole. Based on additional surveys, silviculture prescriptions can be developed to meet the overall objectives of maintaining tree health but these may be contrary to the goal of maintaining screening within the campground. Treatment of fresh conifer stumps with a registered borate compound to reduce the probability of annosus root disease infection is required for all conifer stumps in recreation areas (R-5 FSM 2303).

A vegetation management plan that would incorporate planned thinnings, regeneration of open areas and take into account campground management goals and objectives would be useful for both sites. Thinnings should be implemented with the goal of creating mosaics of various ages, size classes and species.

B. **Insecticide treatment**. All noninfested lodgepole pines greater than 8"DBH in the campgrounds would be treated with a registered insecticide by spraying as much of the bole as possible. Treated trees would be protected from adult beetle attack. Trees would need to be treated prior to mid-May, 2003. Insecticide treatments can provide protection up to two years and give the District time to develop and implement long-term strategies to reduce overall stand susceptibility. Consideration needs to be given to the choice of insecticide since both sites are along running water.

5. **Pheromone based strategies**

Identification of aggregation pheromones and field experiments using synthetic components have given insect management specialists a better understanding of the behavior of many bark beetles. Bark beetles engage in mass attacks that are mediated by complex pheromone systems. These chemical signals also provide potential tools for monitoring and direct control in insect

management programs. Pheromone based strategies can be used as part of an integrated management program incorporating mass trapping, monitoring of beetle flights, and inhibition/disruption of beetle infestations. Further discussions and clarification of management objectives would be necessary if the District is interested in persuing a pheromone based strategy.

Conclusions

To reduce/limit unacceptable levels of mountain pine beetle-related mortality in Goose Meadow and Silver Creek campgrounds and in the perimeter areas thought should be given to the implementation of one or more of the above alternatives. Forest Health Protection (FHP) can assist in the further development and implementation of any of the described alternatives. In addition, FHP prevention/suppression funds can be used for some of the treatments, but cannot be used to remove dead and/or hazard trees. If you are interested in persuing suppression/prevention funding, have any questions regarding this evaluation or need further assistance please contact the FHP staff at 530-257-2151.

Also, as mentioned above, if Forest Health Protection input for management of the Silver Creek summer home tract is desired, please let us know.

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